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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/579,038

06/13/2008

Ryoichi Shimoi

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22428 7590 12/08/2009  
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EXAMINER

LEONG, JONATHAN G

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

12/08/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/579,038	<b>Applicant(s)</b> SHIMO ET AL.	
	<b>Examiner</b> JONATHAN G. LEONG	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 1-7, 11 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-10 and 13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 October 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____  |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :05/10/2006, 10/10/2006, 03/03/2009.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Species H, readable on Claims 8, 9, 10, and 13 in the reply filed on 11/25/2009 is acknowledged.
2. Claims 1-7, 11, and 12 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11/25/2009.
3. The restriction requirement for species B, C, and D is withdrawn since they are not mutually exclusive to the remainder of species (A and E-J). The restriction requirement for species A and E-J is final.

### ***Information Disclosure Statement***

4. The information disclosure statement filed 03/03/2009 lists a copy of Office action issued on January 9, 2009 in a corresponding Chinese Application that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

### ***Abstract***

5. The abstract of the disclosure is objected to because the sentence starting on line 7 "Or a hydrophilic treatment..." is not proper English grammar. Examiner recommends combining said sentence with the previous sentence (that starts on line 4) while also indicating that the boundary layer can be either of the two possibilities. Correction is required. See MPEP § 608.01(b).

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 8 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 8, the claim limitation “by closing up” on lines 5 and 11 is unclear. For the purpose of this Office action, said claim limitation has been taken to refer to conductive particles adhered together.

Regarding claim 13, the claim limitation “by closing up” on lines 7 and 12 is unclear. For the purpose of this Office action, said claim limitation has been taken to refer to conductive particles adhered together.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 8-10 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Mizuno (JP 07-01346).

Regarding claims 8 and 13, Mizuno discloses an electrolytic membrane structure and a fuel cell comprising the same ([0015], Fig. 1), wherein an electrolytic membrane is placed between an electrode in an anode side and an electrode in a cathode side

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([0015]/L4-8); the electrolytic membrane comprising a catalyst layer (catalyst reaction layer, [0015]/L4) formed by closing up conductive particles carrying catalysts on each face, in the anode side and in the cathode side, of the electrolytic membrane, the each face contacts to each of the electrodes ([0015]/L4-10, [0023]/L1-5, Fig. 1); and a boundary layer (fire-resistant layer, [0016]/L3) which is adjacent to the catalyst layer in the anode side on one face of the electrolytic membrane ([0016]/L3-5) and is formed between a portion to be easily contacted with an oxygen gas and the catalyst layer in the anode side (see Fig. 3), wherein the boundary layer is formed by closing up the conductive particles to which a hydrophilic treatment is carried out (the carbon particles are made into a paste using NAFION<sup>TM</sup> which is the same material used for the membrane of the fuel cell, as such, the carbon particles are inherently granted hydrophilic properties when made into said paste, [0023]/L6-10, [0017]/L6-7).

Regarding claim 9, Mizuno discloses all of the claim limitations as set forth above. Mizuno further discloses the boundary layer is formed so as to surround a periphery of the catalyst layer, where is easily contacted with the oxygen gas ([0016]/L3-5, Fig. 3).

Regarding claim 10, Mizuno discloses all of the claim limitations as set forth above. Mizuno further discloses the boundary layer is formed between a portion in the vicinity of a penetrating passage by which the oxygen gas is supplied to the cathode side which is easily contacted with the oxygen gas, and the catalyst layer (for example, the boundary layer, subjected to oxygen crossover via the membrane, is formed

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between the catalyst layer and the membrane which is in the vicinity of the oxygen gas channel, see Fig. 1, [0016]/L3-5, Fig. 3).

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN G. LEONG whose telephone number is (571) 270-1292. The examiner can normally be reached on M-Th 8:00 AM - 5:00 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571) 272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. G. L./  
Examiner, Art Unit 1795  
12/01/2009

/Basia Ridley/  
Supervisory Patent Examiner, Art Unit 1795